

III. SURFACE WATER ASSESSMENT

G. WETLANDS

1. Extent of Wetlands Resources

According to the Rhode Island Geographic Information System (RIGIS) data approximately 18.4% of the state area (127,721 acres) is wetland and deepwater habitat (Cowardin et al. 1979). There are approximately 92,536 acres of palustrine wetland, 17,518 acres of lacustrine wetland and deepwater habitat, 1839 acres classified as riverine, and 15,827 acres of marine/estuarine wetland. Palustrine wetlands represent 13.3% of the State's surface area; lacustrine areas represent 2.5%; riverine areas represent 0.3% and marine/estuarine areas represent 2.3% of Rhode Island's area. These figures do not include the areas of Narragansett Bay and the Pawcatuck River Estuary. Wetland classes and their approximate acreages are listed in Table 3G-1. The most abundant wetland type in Rhode Island is palustrine forested wetland, commonly known as wooded swamp, dominated by red maple (*Acer rubrum*) or Atlantic white cedar (*Chamaecyparis thyoides*) trees.

Table 3G-1. Wetlands and Deepwater Habitats of Rhode Island (RIGIS 1988)

WETLAND TYPE	AREA (acres)
Riverine Nontidal Open Water	1832
Lacustrine Open Water	17,518
Palustrine Open Water	4481
Palustrine Emergent Wetland: Marsh/Wet Meadow	4341
Palustrine Emergent Wetland: Emergent Fen or Bog	229
Palustrine Scrub-Shrub Wetland: Shrub Swamp	9606
Palustrine Scrub-Shrub Wetland: Shrub Fen or Bog	2060
Palustrine Forested Wetland: Deciduous	60,694
Palustrine Forested Wetland: Coniferous	10,900
Palustrine Forested Wetland: Dead	225
Riverine Tidal Open Water	7.4
Estuarine Open Water	8175
Estuarine Emergent Wetland	4014
Estuarine Scrub-Shrub Wetland	93
Marine/Estuarine Rocky Shore	671
Marine/Estuarine Unconsolidated Shore	2874
TOTAL AREA	127,721 acres

Source: RIGIS. Data based on photo-interpretation of 1988 1:24,000 scale black and white aerial photographs, minimum map unit ¼ acre.

The above information represents approximate present wetland acreage.
Information regarding historical acreage is not readily available.

The DEM Narragansett Bay Estuary Program (NBEP) organized and implemented a collaborative mapping project to determine the abundance and distribution of coastal habitats in Narragansett Bay. True color aerial photographs taken in July 1996 were used to develop Geographic Information System (GIS) maps of eelgrass beds (*Zostera marina*), salt marshes, brackish marshes, beaches, rocky shores, tidal flats, and oyster reefs. The project area is defined as the tidal waters and nearshore areas north of a line extending from Pt. Judith, Narragansett to Sakonnet Point, Little Compton, R.I. A summary of the coastal habitat areas is presented in Table 3G-2. The digital habitat coverages are available through RIGIS. Data from this project have been applied to new studies to identify and prioritize habitat restoration sites and analyze coastal wetland trends in the Bay. Funding was provided by the DEM Aqua Fund, the NBEP, the U.S. EPA, and Save the Bay.

Table 3G-2. Summary of Coastal Habitats in Narragansett Bay (RI and MA)

HABITAT TYPE	AREA (acres)
Open Water	124,259.4
High Salt Marsh	2,708.7
Beaches	1,450.5
Rocky Shores	573.3
Tidal Flats	568.6
Low Salt Marsh	443.2
Brackish Marsh	427.6
High Scrub-Shrub Marsh	159.3
Eelgrass Beds	99.5
Pannes & Pools	46.3
Dunes	43.0
Artificial Jetties & Breakwaters	23.1
Oyster Reefs	9.0
Stream Beds	<u>3.5</u>

TOTAL AREA..... 130,815.0 acres

Source: *Report on the Analysis of True Color Aerial Photographs to Map Submerged Aquatic Vegetation and Coastal Resource Areas in Narragansett Bay Tidal Waters and Nearshore Areas, Rhode Island and Massachusetts*. Prepared by I. Huber, Natural Resources Assessment Group, University of Massachusetts, November 1999. Narragansett Bay Estuary Program Report No. 99-117.

The DEM NBEP is currently coordinating a similar cooperative mapping project in the South Shore, Little Compton and Block Island. True color aerial photographs taken in June 1999 are being used for the delineations. The project area encompasses the South Shore coastal ponds and watershed, the Pawcatuck River and Little Narragansett Bay, Little Compton coastal ponds and watershed, and Block Island tidal and near shore areas. Project partners include the U.S. Fish and Wildlife Service, University of Massachusetts, and the University of Rhode Island Environmental Data Center. The results from this project will be available to environmental organizations and local planning groups, and will be a central component of the statewide Habitat Restoration Plan. Funding is being provided by the R.I. Oil Spill Prevention, Administration, and Response Fund and EPA, Region 1.

a. Freshwater Wetlands – State Regulations

Rhode Island was among the first states to pass legislation to protect freshwater wetlands. The Rhode Island Freshwater Wetlands Act (R.I.G.L. Sections 2-1-18 et seq.) was enacted in July 1971. The Act describes the public policy of the State of Rhode Island and Providence Plantations to preserve, protect, and restore the purity and integrity of the State's freshwater wetlands in order to protect the health, welfare and general well being of the public. The Act and the *Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act* describe the wetland functions and values that are regulated and protected: floodwater storage, groundwater recharge, wildlife habitat, recreation, and water quality improvement.

The Department of Environmental Management (DEM) and the Coastal Resources Management Council (CRMC) are both charged with regulation of freshwater wetlands, DEM through the Act and CRMC through R.I.G.L. Chap. 46-23-6. The DEM Office of Water Resources (OWR) Wetland Permitting Program and the Office of Compliance and Inspection Wetland Enforcement Program currently administer and enforce the Act and the *Rules and Regulations*. In 1994, the DEM adopted a major comprehensive revision of the *Rules and Regulations* in order to codify practices, procedures, results of case law decisions and policies which had developed since the last major revision to the rules in 1981. In general, approval is required for any activity that may alter the character of any freshwater wetland. Applicants are required to avoid and minimize all impacts to wetlands and no random, unnecessary or undesirable alteration of wetlands is permitted. As part of a permit streamlining initiative, DEM promulgated additional revisions to the *Rules and Regulations* in April 1998 expanding the list of activities exempt from permit requirements (Rule 6.00). To continue the evaluation of the Wetlands Program and to investigate additional ways to streamline its operations and increase the satisfaction of the regulated community DEM convened a Wetland Task Force in January 2000. The Task Force recommended statutory, regulatory, policy and administrative programmatic changes and protection improvements. DEM and the Task Force are currently analyzing these recommendations. Priority will be given to those that will further streamline the wetland permitting processes.

In 1996, the Rhode Island legislature passed a revision to R.I.G.L. Chapter 46-23-6 giving the CRMC regulatory jurisdiction of freshwater wetlands shoreward of a boundary line to be mutually determined by the agencies. This jurisdictional boundary was developed by the agencies in 1996 and 1997 and CRMC's new program for freshwater wetlands became effective August 18, 1999. The legislative intent was to reduce duplicative permitting in the coastal zone. Freshwater wetlands landward of the jurisdictional boundary are regulated by DEM and "freshwater wetlands in the vicinity of the coast" seaward of the boundary are regulated by CRMC according to the *Rules and Regulations Governing the Protection and Management of Freshwater Wetlands in the Vicinity of the Coast* (CRMC 1999)

Freshwater wetlands in Rhode Island include: swamps, marshes, ponds, bogs, the area of land within 50 feet of these wetlands (perimeter wetland), 100-

year floodplain; all rivers, streams, and intermittent streams; 100 foot and 200 foot riverbanks depending upon whether the associated flowing body of water is less than or greater than 10 feet in width, areas subject to flooding and storm flowage; any forested, shrub or emergent wetland; and special aquatic sites (vernal pools). In general, approval is required for any project or activity which would excavate, drain, fill, deposit material or effluent, divert flow into or out of, dike, dam, divert, change, add to or take from, or otherwise alter the character of any freshwater wetland. Exempt activities as specified by law or rule and carried out in a manner which is protective of wetland functions and values do not need a specific written approval. Certain projects including new farm roads, new farm ponds and drainage structures for agricultural purposes carried out by farmers are handled by DEM's Division of Agriculture. The Division of Agriculture coordinates the review and evaluation of such projects with the OWR to ensure that such projects represent insignificant alterations to freshwater wetlands.

During calendar years 1996 through 1999, the DEM Wetlands Permitting Program issued 416, 362, 328, and 314 new permits respectively. In each of these 4 years over 92% of the permits were for projects involving insignificant impacts to regulated wetlands; with a total of 77 applications requiring a formal permit for significant alterations. There were 9 emergency permits issued during this 4-year period. Approximately 97% of the applications received by the Wetlands Program were approved, with the remaining 3% resulting in denials or other actions. In January 1998, supported by a 104(b)3 wetlands grant, OWR instituted data systems improvements to track the extent of wetland loss. The results generally indicate that permitted losses are kept to a minimum, which is a reflection of the continued emphasis on protecting wetland ecosystems from direct or indirect adverse impacts. Wetland losses and gains are discussed later in this chapter.

During calendar years 1998 and 1999 the Wetland Enforcement Program received 596 and 700 wetland-related complaints respectively. During the same 2 years the Wetland Enforcement Program issued 68 and 86 actions, e.g., warning letters, Notices of Intent to Enforce, and Notices of Violation. The Enforcement Program determined 110 and 185 complaints to be unfounded and determined that 62 and 87 additional matters needed no further action. A total of 639 and 1099 inspections were completed in 1998 and 1999. A large majority of enforcement actions are resolved without the need for adjudication or court action. Besides seeking informal resolution of all enforcement actions, the DEM uses alternative dispute resolution to resolve violations. When necessary, cases are referred to the Attorney General's Office for prosecution or to Superior Court. In 1998 and 1999 no cases were referred.

b. Coastal Wetlands – State Regulation

Coastal wetlands in Rhode Island are regulated by the CRMC through the Coastal Resources Management Program (CRMP) and Special Area Management Plans (SAMP). The Rhode Island General Assembly established the Council in 1971 for the purpose of managing the coastal resources of the State, including the barrier beaches of the southern coast, Rhode Island and Block Island Sounds, and Narragansett Bay. Activities proposed in Rhode Island's tidal waters, on

shorelines abutting tidal waters and coastal ponds, as well as activities within 200-foot of coastal features (beaches, dunes, wetlands, cliffs, bluffs, embankments, rocky shores, and manmade shorelines) require a CRMC approval (Assent). A variety of industrial activities proposed inland of the coastal zone that may impact coastal resources may also require a CRMC Assent. Projects that are proposed in the poorly flushed estuaries of the Narrow River and the south shore coastal ponds and that meet given size thresholds trigger a SAMP review by CRMC. Both SAMPs were revised by the CRMC in April 1999 to enhance protection of coastal resources including coastal and freshwater wetlands.

There are approximately 3700 acres of salt marsh in Rhode Island, approximately 10% of which are considered fringe marshes less than 5 yards wide (CRMP). Approximately 90% of Rhode Island's salt marshes abut tidal waters designated Type 1 (Conservation) and Type 2 (Low Intensity Uses) by the CRMP. CRMP policies and regulations governing Type 1 areas prohibit alteration of coastal wetlands, while policies for Type 2 marshes allow only minimal alterations in association with dock construction and other low-intensity uses. CRMC staff report that the policies are generally effective in avoiding further loss of coastal wetlands. Specific figures of wetland loss are not available due to data system constraints.

c. US Army Corps of Engineers (ACOE) - Programmatic General Permit (PGP Process)

As a result of cooperative efforts between the DEM OWR, CRMC and the Army Corps of Engineers (ACOE), a programmatic general permit (PGP) process was implemented in Rhode Island in February 1997. This process replaced the Nationwide Permits Process previously implemented by ACOE in accordance with Section 404 of the Federal Clean Water Act. Under the PGP, projects are categorized as I or II. Category I projects represent minor impacts to State waters and are non-reporting to the ACOE. Category II projects represent more than minor impacts to State waters and must be reviewed at a monthly screening meeting where appropriate State and Federal agencies review the project. If the project is determined to meet all appropriate state and federal regulations, agencies can determine compliance at the meetings. For both category I and II projects, the appropriate State agency, either the DEM, Freshwater Wetlands Program, or the CRMC, can issue the PGP. For projects that fall under the ACOE Individual Permit process, the ACOE maintains its established permitting process. To date, the process has successfully streamlined the multi-agency permitting process and facilitating coordination.

2. Development and Enforcement of Wetland Water Quality Standards

a. Wetlands Water Quality Standards

The term "waters of the state" include both freshwater and coastal wetlands. Accordingly the Surface Water Quality Regulations including the surface water classifications, standards and criteria. (Table 3G-3) pertain to all wetlands.

TABLE 3G-3. Development of State Wetland Water Quality Standards

	In Place	Under Development	Proposed
Use Classification	X		
Narrative Biocriteria	X		
Numeric Biocriteria			
Antidegradation	X		
Implementation Method	Section 401 State Wetland Permit		

Biomonitoring is a method by which scientists study the natural systems to determine their ecological health. Currently, Rhode Island uses biomonitoring to assess the health of flowing rivers and streams, however, there are no established protocol for implementing these measures in wetland systems. The northeastern states have been selected by EPA headquarters to test and implement wetland bioassessment projects through the New England Bioassessment Wetland Working Group (NEBAWWG). Rhode Island participates in this working group.

b. Section 401 Water Quality Certification Program

OWR enforces the wetland water quality standards through the Water Quality Certification program as provided for in the Rhode Island Water Quality Regulations for Water Pollution Control.. Certain proposed activities require an applicant to obtain approval from the Water Quality Certification Program. Such approval certifies that the proposed project does not violate the State Water Quality Regulations. Rule 13 of the State Water Quality Regulations defines these activities to include federal projects, as defined in Section 401 of the Clean Water Act, and certain projects located wholly or partly in the coastal zone. These projects include dredging and dredged material disposal, filling of Waters of the State, site disturbances which have the potential to contribute increased pollutants to a Water of the State, (specifically residential development of six or more units, any commercial, industrial, state, or municipal land development, or any project which disturbs five or more acres), marina construction or expansion, flow alterations, Harbor Management Plans, and point source discharges. In addition to Rule 13 requirements, a Water Quality compliance review or Water Quality Certification is required for certain proposed activities associated with inland waters that fall under the jurisdiction of the Freshwater Wetlands Program and/or the ACOE PGP process. In 1999 the OWR issued 116 WQC determinations in association with the above described review process. So far in 2000, the OWR has issued 15 WQC determinations.

The WQC evaluation is performed using the Antidegradation Policy provisions of the Water Quality Regulations as guidance to determine compliance with these regulations. The Antidegradation Policy is based on the Federal Antidegradation Policy requirements (40 CFR, 131.12) and adopted under the authority of Chapter 46-12, 42-17.1, and 42-35 of the General Laws of Rhode Island, as amended. The provisions of the state Antidegradation Policy have as their objective the maintenance and protection of various levels of water quality

and uses. This policy consists of three tiers of water quality protection; tiers 1, 2, and 3. Antidegradation is one of the minimum elements required in state water quality standards and applies to any new or increased activity that could lower water quality. Antidegradation requires that all existing uses are to be maintained in State waters. Tier 3 criteria reserved for Special Resource Protection Waters (SRPWs). Tier 3 prohibits any permanent lowering of water quality in high quality waters designated as Outstanding Natural Resource Waters. This policy has been referenced as grounds to denial and approval of proposed alterations to the State's freshwater or coastal wetlands.

3. Integrity of Wetlands

a. Freshwater Wetlands Loss and Restoration

Historic freshwater wetland loss in Rhode Island, as reported in U.S. Fish and Wildlife Service publication *Wetlands Loss in the United States 1780's to 1980's* (Dahl 1990) was estimated to be 37%, although the methodology used to generate this figure is seriously flawed (F. Golet, University of Rhode Island Department of Natural Resources Science; pers. comm., 1999). In the Providence metropolitan area, major historic wetland losses can be attributed to urbanization. In the more rural parts of the State, transportation projects and residential development have been the primary causes of wetland loss both historically and in more recent times. Parkhurst (1977) found that highway construction and residential development caused the greatest amount of wetland loss in South Kingstown between the years 1939 and 1972. Wetland loss due to agriculture in Rhode Island has been relatively minor compared to other parts of the country.

In addition to wetland loss there has historically been conversion of wetlands from one class to another, with the construction of dams being the primary mechanism. The construction of dams has resulted in the conversion of palustrine vegetated wetlands and riverine wetlands to open water and deepwater habitats. Over time, areas of palustrine vegetated wetland have developed at the edges of the impoundments.

The OWR has recently improved its ability to track permitted freshwater wetland losses and gains. With the support of an EPA 104(b)3 wetlands grant, OWR completed data system improvements to institute computer tracking of wetland losses and gains in the Permit and Enforcement Programs. Computerized tracking of physical losses and gains went on-line in January 1998. Data collected to date for calendar years 1998 and 1999 indicate that permitted freshwater wetland losses were limited to 3.3 acres across 17 sites in 1998 and to 0.28 acres across 5 sites in 1999. It should be noted, however, that results of a recent project to evaluate wetland permit compliance indicate that additional wetland losses are occurring during construction (Faneuf 1998). Therefore, total wetland loss is believed to be somewhat higher than permitted loss due to these unauthorized activities.

Based upon field inspections in response to complaints from the public, the Wetlands Enforcement Program calculated that during the same 2 years, 1998 and 1999, 10.7 and 10.0 acres of freshwater wetland were lost due to unauthorized

alterations. Fourteen acres (1998) and 13.4 acres (1999) of perimeter wetland, riverbank wetland, and floodplain were illegally altered during the same period. It is DEM policy to pursue restoration wherever feasible. As a result of enforcement activities, a total of 11.5 acres of wetland and 18.7 acres of buffer areas were reported restored during 1998 and 1999. Note that these figures reflect restorations completed in 1998 and 1999 that may have been identified in prior years.

With the assistance of an EPA 104(b)3 wetlands grant DEM and the University of Rhode Island are collaborating on a two phase project to develop and apply methods for the identification and prioritization of freshwater wetlands restoration opportunities. In Phase 1, methods were developed and applied in 2 test areas in urban and rural parts of the state. In Phase 2, beginning in July 2000, the methods will be applied throughout the Woonasquatucket watershed. After preliminary selection of potential restoration sites a select number will be carried through a feasibility phase. The results will be a wetland restoration plan for the watershed. Both of these projects will contribute to the development of the freshwater wetland component of a statewide Habitat Restoration Plan.

b. Coastal Wetlands Loss and Restoration

It is generally accepted that the historical loss of coastal wetlands in Rhode Island has been substantial. As a result, in recent years, there has been growing interest in facilitating coastal habitat restoration. The most significant project to date has been the 1.9 million dollar salt marsh restoration at the DEM-owned Galilee Bird Sanctuary in Narragansett. During the 1950s, dredge spoils from the Port of Galilee were deposited over portions of the marsh complex. Construction of the Galilee Escape Road in 1956 divided the marsh and restricted tidal flushing to a large portion of the marsh. A multi-year, multi-agency effort resulted in the restoration of 84 acres of salt marsh and 14 acres of new open tidal channels. At the state's request, the ACOE provided funding and assumed supervision of the construction contract. The project also involved funding and extensive technical support from the Rhode Island Department of Transportation, the University of Rhode Island, the U. S. Fish and Wildlife, and Ducks Unlimited. More recently, numerous partners have teamed to complete coastal wetland restoration projects at Common Fence Point, Portsmouth; Sachusett Point National Wildlife Refuge, Middletown; and Mosquito Beach, New Shoreham.

The DEM NBEP is coordinating a cooperative project funded by DEM's Aqua Fund Program to identify coastal wetland sites for potential restoration in the vicinity of Narragansett Bay. The results of the recently completed Coastal Habitat Inventory for Narragansett Bay have provided the foundation for this work. Using aerial photograph interpretation and field work potential coastal wetland restoration sites are being identified and mapped. The GIS maps and database will facilitate the efforts of decision-makers to locate and prioritize wetlands that are practical and feasible to restore. Project partners include the U.S. Fish and Wildlife Service, University of Massachusetts, University of Rhode Island Environmental Data Center, and Save the Bay. Another project funded by the U.S. EPA will provide an historical assessment of changes or trends in coastal wetlands and their buffers between the 1950's and 1990's, and back to the 1930's

in selected sites. Digital information from these projects will be available through RIGIS.

In December 1998, the DEM NBEP organized and hosted an interdisciplinary charette on coastal habitat restoration. Nearly 100 people representing community and environmental groups, fishermen, lawmakers, researchers, and state, federal, and municipal agencies gathered to inventory restoration opportunities and accomplishments and to discuss scientific, policy, and regulatory aspects of restoration. As a result, in April 1999, an interagency forum to coordinate coastal habitat restoration activities statewide was convened. More recently it has been decided that it is the appropriate forum for freshwater wetland restoration planning as well. Through outreach, technical assistance, information sharing, and planning the Habitat Restoration Team is raising awareness of restoration needs while improving the state's capacity to fund and accomplish restoration projects.

In July 2000, the DEM NBEP embarked on a two-year partnership project with CRMC, Save the Bay, and the NOAA Coastal Services Center in Charleston, S.C to develop the Coastal Habitat Restoration Plan and Information System. This plan will be a Web-based tool to promote and facilitate restoration of Rhode Island's coastal habitats. The System will combine information on coastal habitats and restoration sites with a decision-making model, allowing users to select and prioritize coastal habitat restoration projects. The intended audience includes state and local agencies, community groups, municipalities, academic institutions, policy-makers and the public. The system will be used to develop a statewide coastal habitat restoration plan for Rhode Island and, it is expected, will enhance the state's capacity for undertaking restoration at all scales. Many of the federal, state and non-governmental members of the Habitat Restoration Team, are actively participating in the project, scheduled for completion in June, 2002. It is anticipated that, in addition to improving restoration planning and capacity in Rhode Island, the system will be transferable to other geographic areas with an interest in promoting stakeholder involvement in regional restoration planning.

4. Additional Wetland Protection Activities

a. Protection of Wetlands Via Acquisition

An additional means of protecting wetlands is through acquisition. The DEM Office of Planning and Development (P&D) includes wetland protection within its coordination of state land acquisition programs and open space grants. Preliminary estimates of acres of wetlands permanently protected through acquisition by the state administered programs and associated partners total over 220 acres for the period of 1995 through 1998. The programs use state bond funds supplemented by other sources such as U.S. Fish & Wildlife funded, North American Waterfowl Conservation Act grants. In addition, the RI Audubon Society reported in the years 1996 through 1998, that 292 acres of wetlands were protected via private land conservation efforts. Data on wetland acquisitions by The Nature Conservancy (TNC) and the thirty local land trusts in Rhode Island are not readily available.

Wetlands often represent only a portion of an overall open space acquisition and are not necessarily targeted. Two special projects were funded in 1999 that specifically involve wetland assessment for acquisition purposes. TNC is currently working with the DEM Offices of Water Resources and Planning and Development, and local stakeholders, through an EPA 104(b) 3 wetlands grant, to develop a wetland conservation plan for the Towns of Tiverton and Little Compton. In addition the Rhode Island Association of Wetland Scientists has teamed with 4 towns to assess wetlands on specific parcels of property that are under consideration for protection. Finally, the Wetland Task Force Watershed Working Group recommended that wetland acquisition planning be integrated through the watershed approach.

b. Data Management Improvements

Utilizing 104(b)3 funds, OWR is continuing to undertake projects to improve data system capabilities relative to wetland programs. Specifically, the Wetlands Programs instituted tracking of wetland loss and gain in 1998 and the Foxpro data management system was updated to the visual system in 1999. More recently, through an interactive map server DEM's geographic information coordinator has linked wetlands applications with the statewide digital ortho photographs and with other natural resources overlays. A separate DEM-wide permit streamlining effort is underway and an Oracle data management system may be developed which would link wetlands data with other programs.

c. Watershed Based Protection Efforts

In Rhode Island, local authority for regulating wetlands is limited; however, it is recognized that municipalities and local stakeholders play a critical role in resource protection. To strengthen local capabilities, the URI Cooperative Extension Program undertook a 2-year project, piloted in the Wood-Pawcatuck Watershed, aimed at providing improved tools for local wetland protection. Working collaboratively with TNC, the project involved collection of field data, analysis and classification of the water quality functions of wetlands, and promotion of local actions to protect high value wetlands. This work was funded by EPA 104(b)3 wetland grants. In addition EPA 104(b)3 wetlands grants are being used by the DEM OWR, in partnership with the USGS and others, for a multiyear habitat assessment study in the Queens-Usquepaugh watershed. The goal of this project is to provide technical information as a foundation for a voluntary water management plan for the watershed.

d. Innovative/Effective Approach to Protection - Wetland Habitat Restoration Planning

As previously described, the OWR has utilized EPA 104(b)3 wetland funds to build the technical foundation for both freshwater and coastal wetland restoration planning.

e. Vernal Pool Workgroup

Other EPA 104(b)3 wetland funds have been used for vernal pool protection projects. In 1998, the URI Cooperative Extension, TNC, and the University of Massachusetts Natural Resources Assessment group collaborated to identify potential vernal pools in the Pawcatuck watershed. Potential vernal pools were mapped using 1:24,000 aerial photographs and then digitized. The vernal pools were grouped into 4 categories based upon the confidence level of the photo interpretation and delineation. A follow-up FY99 wetland grant was awarded to the URI Department of Natural Resources Science to develop a web-based vernal pool protection manual for use by scientists and educators. URI will also work with the vernal pool digital coverage of the Pawcatuck watershed and create a map of confirmed versus unconfirmed vernal pools. This map will be utilized for further watershed planning projects.

In September 1999, the DEM Fish and Wildlife participated in the Northeast Regional Partners for Amphibian and Reptile Conservation meeting. The purpose of the group is to develop a regional approach to the conservation of herptofauna. In March 2000, EPA New England and partners coordinated and produced a 3-day conference entitled Vernal Pools of the Northeast: Ecology, Conservation and Education that was held in Rhode Island. The conference was very well attended with approximately 500 participants and it will serve as a stepping stone toward more coordinated vernal pool protection in the future.

f. Protection of Freshwater Wetlands Via Permitting

As a result of the reorganization of DEM in 1996, the Wetlands Permitting Program, Water Quality Certificate program and other water-related permitting programs are now housed together in DEM's OWR. This has facilitated closer coordination between the various programs and opportunities remain for further integration. Permit streamlining has received a great deal of emphasis. With the creation of a wetlands policy position in the OWR in 1999 and the addition of several new biologists to the Permitting Program a variety of actions to increase wetland outreach and to streamline operations while maintaining effective environmental protection have been completed.

5. Agency Coordination/Wetlands Protection

Coordination on freshwater wetland protection occurs routinely with the water permitting programs within the OWR, as well as with the DEM Office of Compliance and Inspection and the CRMC. In addition, the wetlands policy and permitting staffs coordinate routinely with other federal, state, and local wetland protection partners, including the EPA Region 1, the Rhode Island Association of Wetland Scientists and the University of Rhode Island. The following DEM Offices also routinely coordinate with the Wetlands Program: a) the Division of Fish and Wildlife routinely provides habitat-related comments on large projects development projects that include wetland alterations; b) the Division of Agriculture has regulatory authority over farming activities in freshwater wetlands and hence, routinely coordinates project review with the Wetland Permit Program;

c) the Division of Forest Environment coordinates when needed on matters regarding cutting or forest management plans which could effect freshwater wetlands, and d) the Office of Waste Management have established procedures to coordinate on remedial action plans that may involve disturbances to freshwater wetlands.